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RE: Wilcox Oil Company Superfund Site – Residential Data Results for indoor air and passive soil gas

This letter provides you with a summary of the passive soil gas and indoor air data results for your property.

PASSIVE SOIL GAS

During August 2016, passive soil gas samples were taken from several locations on your property. The sample locations were placed throughout the property within former refinery operation areas and former tank locations. Based on our review of the data, there is a potential for the generation of contaminated soil gases. As you can see from Table 1, several volatile compounds were detected throughout the property with the highest reported mass found within the northeastern portion of the process area.

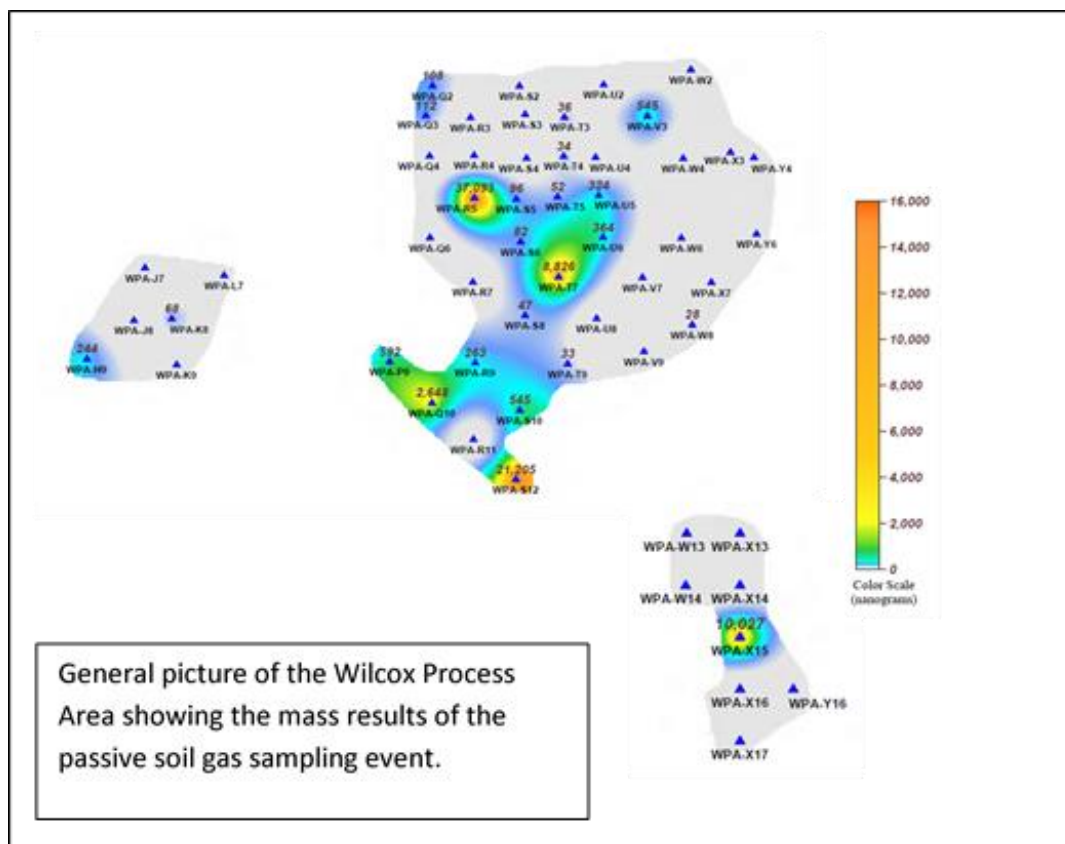
Because data show the potential for the generation of contaminated gases, the indoor air and crawl space air was sampled to determine whether the gases are present under and within the home. As presented in the Indoor Air summary, some contaminants exceed the RSLs for indoor air samples collected from your property.



General picture of the Wilcox Process Area and the locations of the passive soil gas



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INDOOR AIR

Indoor air samples were collected from outside the home, within the crawlspace under the home, and within the home. Results are provided in Table 2. Based on our review of the data, some contaminants exceed the RSLs for indoor air in samples collected from the home. Although the RSLs for indoor air are exceeded, this is an indication that further evaluation may be needed.

The residential screening levels for indoor air represent conservative levels developed using risk assessment guidance from the EPA Superfund program. RSLs are considered by the Agency to be protective for humans (including sensitive groups) over a lifetime of exposure. RSLs are not cleanup standards and are used for site "screening" to help identify areas, contaminants, and conditions that may require further investigation at a particular site. Generally, at sites where contaminant concentrations fall below RSLs, no further action or study is warranted under the Superfund program, so long as the exposure assumptions at a site match those used to develop the RSL. Chemical concentrations above the RSL do not automatically trigger a response action. Exceeding the RSL, however, suggests that further evaluation of the potential risks by site contaminants is appropriate. In addition, further evaluation of the potential risks related to site contaminants that were detected in the air but have no RSL is appropriate. As we move forward with our site investigation, we will be evaluating these contaminants in more detail through a Site-specific Human Health Risk Assessment to determine the potential risks these contaminants may pose.

Thank you for your continued interest and support for this project. We would like to follow-up with you to discuss the data presented in this letter and answer any questions that you may have. We will contact you by phone to schedule a time that fits your schedule. In the interim, should you want to talk with us, please contact me at 214-665-8143, or 1-800-533-3508, or contact Todd Downham, Oklahoma Department of Environmental Quality at 405-702-5136.

Sincerely,

Katrina Higgins-Coltrain
Remedial Project Manager
LA/NM/OK Section

Table 1: Passive Soil Gas Results

Sample ID:	WPA-H9	WPA-K8	WPA-P9	WPA-Q2	WPA-Q3	WPA-Q10
Analysis Date:	9/7/2016	9/8/2016	9/8/2016	9/8/2016	9/8/2016	9/8/2016
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Benzene	244	40	592	108	112	2,648
Toluene	173	<25	214	54	27	425
Ethylbenzene	27	<25	<25	29	29	5,146
p & m-Xylene	56	<25	72	55	36	1,012
o-Xylene	25	<25	45	25	<25	516
Naphthalene	<25	28	44	<25	<25	798
2-Methylnaphthalene	<25	68	<25	<25	<25	342

Sample ID:	WPA-R5	WPA-R9	WPA-S5	WPA-S6	WPA-S8	WPA-S10
Analysis Date:	9/8/2016	9/8/2016	9/8/2016	9/8/2016	9/8/2016	9/8/2016
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Benzene	37,093	263	96	82	47	545
Toluene	8,328	28	53	27	<25	577
Ethylbenzene	9,402	81	30	<25	<25	53
p & m-Xylene	11,480	70	61	31	25	307
o-Xylene	3,476	25	<25	<25	<25	214
Naphthalene	<25	82	<25	279	<25	29
2-Methylnaphthalene	<25	42	<25	524	<25	28

Sample ID:	WPA-S12	WPA-S12-D	WPA-T3	WPA-T4	WPA-T5	WPA-T7
Analysis Date:	9/8/2016	9/8/2016	9/13/2016	9/8/2016	9/8/2016	9/8/2016
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Benzene	21,205	15,404	36	34	52	8,826
Toluene	12,802	12,806	46	64	55	1,791
Ethylbenzene	9,429	8,415	<25	<25	<25	532
p & m-Xylene	20,697	18,655	27	72	41	1,559
o-Xylene	17,670	16,900	<25	27	<25	607
Naphthalene	7,440	8,532	<25	<25	<25	69
2-Methylnaphthalene	15,846	15,262	<25	<25	<25	100

Results in nanograms (ng).

Table 1: Passive Soil Gas Results

Sample ID:	WPA-T7-D	WPA-T9	WPA-T26	WPA-U4	WPA-U5	WPA-U6
Analysis Date:	9/8/2016	9/8/2016	9/8/2016	9/8/2016	9/13/2016	9/13/2016
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Benzene	8,652	33	<25	<25	324	364
Toluene	1,895	<25	32	<25	437	173
Ethylbenzene	550	<25	<25	90	99	29
p & m-Xylene	1,761	<25	<25	48	318	95
o-Xylene	695	<25	<25	31	265	42
Naphthalene	64	<25	<25	1,056	<25	<25
2-Methylnaphthalene	101	<25	<25	4,083	<25	<25

Sample ID:	WPA-V3	WPA-V7	WPA-W8	WPA-W13	WPA-X15	WPA-X25	WPA-X25-D
Analysis Date:	9/8/2016	9/8/2016	9/9/2016	9/9/2016	9/9/2016	9/9/2016	9/9/2016
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng	ng
COMPOUNDS							
Benzene	545	<25	28	26	25	35	33
Toluene	263	27	<25	<25	<25	<25	<25
Ethylbenzene	29	<25	<25	<25	<25	<25	<25
p & m-Xylene	91	<25	<25	<25	40	<25	<25
o-Xylene	57	<25	<25	<25	47	<25	<25
Naphthalene	27	48	<25	<25	2,145	<25	<25
2-Methylnaphthalene	37	122	<25	<25	10,027	29	<25

Results in nanograms (ng).

Table 2: Air Sample Detection Summary Wilcox Process Area

ID	Analyte	Sample Date	Result ($\mu\text{g}/\text{m}^3$)	RSL ($\mu\text{g}/\text{m}^3$)
WPA-IA-04	Acetone*	9/21/2016	39.5	32000
	Chloroform	9/21/2016	0.93	0.12
	Chloromethane	9/21/2016	8.98	94
	1,4-Dichlorobenzene	9/21/2016	1.08	0.26
	Dichlorodifluoromethane	9/21/2016	2.23	100
	Benzene	9/21/2016	5.57	0.36
	Ethylbenzene	9/21/2016	1.44	1.1
	n-Hexane	9/21/2016	1.27	730
	Styrene	9/21/2016	2.22	1000
	1,3-Butadiene	9/21/2016	11.7	0.094
	Toluene	9/21/2016	10.2	5200
	Trichlorofluoromethane	9/21/2016	1.58	--
	2-Butanone	9/21/2016	6.47	5200
	1,2,4-Trimethylbenzene	9/21/2016	1.43	2.1
	Vinyl acetate	9/21/2016	3.88	210
	meta-/para-Xylene	9/21/2016	4.31	100
	ortho-Xylene	9/21/2016	1.09	100
WPA-CS-04	Acetone*	9/21/2016	11.0	32000
	Chloromethane	9/21/2016	1.37	94
	Dichlorodifluoromethane	9/21/2016	2.38	100
	Benzene	9/21/2016	0.74	0.36
	Toluene	9/21/2016	3.13	5200
	Trichlorofluoromethane	9/21/2016	1.58	--
	2-Butanone	9/21/2016	0.98	5200
WPA-VIBG-02	Acetone*	9/21/2016	24.7	32000
	Chloromethane	9/21/2016	1.57	94
	Dichlorodifluoromethane	9/21/2016	2.33	100
	Benzene	9/21/2016	0.32	0.36
	2-Butanone	9/21/2016	2.19	5200
	n-Hexane	9/21/2016	1.27	730
	2-Butanone	9/21/2016	2.19	5200
NOTES: RSL = Regional Screening Level for Residential Air ("EPA Screening Level Summary Table May 2016"). * = Flagged because the analyte concentration was high in the certification blanks or lab method blanks. WPA = Wilcox Process Area CS = Crawl space vapor sample. IA = Indoor air sample. VIBG = Vapor intrusion background air sample.				